# Suggested Specifications
# Dunkirk
# Condensing Boiler
# CH-80, 100, 120, 150, 180

**1.0 General Requirements:**

1.1 Provide and Install Boiler(s) in accordance with the plan drawings, written specifications and contract documents.

1.2 All work shall be performed in a neat workmanship like manner compliant with all local code authorities.

**2.0 Submittal**

2.1 Product Data: Submit manufacturer's technical product data, including rated capacities of selected model, weight , installation and start-up instructions, and furnished accessory information.

2.2 Shop Drawings: Submit manufacturer's assembly drawings indicating dimensions, connection locations, and clearance requirements.

2.3 Wiring Diagrams: Submit manufacturer's electrical requirements for the boiler including ladder type wiring diagrams for interlock and control wiring.

**3.0 Boiler Requirements**

3.1 Boiler shall provide hot water for heating zones

3.2 Boiler shall be certified for Category IV and Direct Vent applications.

3.3 Boiler shall be a wall hung model.

3.4 Boiler shall be factory tested.

3.5 Refer to all local codes and jurisdictional requirements for installation of field supplied anti-scald valve(s).

**4.0 Acceptable Manufacturers**

4.1 Equivalent units and manufacturers must meet all performance criteria for all fuel options and will be considered upon prior approval.

**5.0 Certifications & Listings**

5.1 Boiler shall be certified by CSA, AHRI, NRCAN.

5.2 Boiler shall be registered with Massachusetts Board, National Board BPVI.

5.2 Boiler shall be constructed in accordance with the American Society of Mechanical Engineers (ASME)

5.3 Boiler shall have an ASME H stamp that is applied to the heat exchanger. Each heat exchanger shall be independently reviewed by an ASME authorized inspector. The boiler heat exchanger shall be rated for a maximum allowable working pressure of 50 psig. The boiler shall be equipped with a 30-psig relief valve.

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## 6.0 System Requirements

6.1 Central heat hydronic system pressure shall be no more than 30 psig and no less than 7.25 psig.

## 7.0 Construction

7.1 Boiler heat exchanger shall be constructed of Iron-Chromium stainless steel parallel tube, encased in a Noryl Resin housing.

7.2 Gas Train Components

- 7.2.1 Gas valve shall be capable of firing in a range suitable for installation requirements and at a 10:1 turndown ratio.
- 7.2.2 Induced draft blower shall be variable speed and controlled by a PCB.
- 7.2.3 Burner shall be constructed of Iron-Chromium stainless steel.
- 7.2.4 Ignition system shall be direct spark with a separate flame sensing rod.

7.3 Boiler shall include an internal Factory installed and wired Boiler Loop Pump.

## 8.0 Control System

8.1 Control system shall be PCB integral controller with an LCD digital display that also includes graphical interface.

8.2 Control will sense supply water temperature and adjust firing rate of the boiler to deliver amount of heat needed.

8.3 Boiler can accept Indirect Tank temperature sensor to control tank operation and display tank temperature.

8.4 Control will sense and display supply water temperature and indicate by icon when boiler is in central heating or domestic water mode.

8.5 Control can accept an optional proprietary Outdoor Air Sensor and have field adjustable reset curves.

8.6 Control display error codes and diagnostic information.

8.7 Control can accept 0-10V input to manage heating set-point or heating power level.

## 9.0 Combustion Air And Flue Vent Exhaust

9.1 The boiler shall be Category IV or Direct Vent, with materials compatible with those standards, and installed as per the manufacturer's written instruction, plan drawings, and all applicable code authorities.

9.2 The flue gas exhaust shall connect directly to the boiler at the labeled location.

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## 10.0 Electrical Connections

10.1 Supply voltage 120 volts 60 HZ 12 amp minimum size circuit. Boiler shall have factory wired and installed cord with male plug end 3 feet long.

10.2 Boiler shall have Low voltage terminal strip with clearly marked connections.

## 11.0 Quality Assurance

11.1 Warranty - Factory Standard Warranty is 10 years limited warranty on heat exchanger, five years limited warranty on parts for residential applications. Commercial applications is an 8 year limited warranty on heat exchanger, three years limited warranty on parts.

11.2 Factory testing - boiler shall be factory test fired.

## 12.0 Boiler Manuals

12.1 The boiler shall be provided with a complete set of instructions as follows:

12.1.1 Installation, Operation and Maintenance Manual (IOM) and Application Guide.

12.1.2 Repair Parts Manual.

12.1.3 User Manual.

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